

Complete Summary

GUIDELINE TITLE

Recommendations for healthcare system and self-management education interventions to reduce morbidity and mortality from diabetes.

BIBLIOGRAPHIC SOURCE(S)

Recommendations for healthcare system and self-management education interventions to reduce morbidity and mortality from diabetes. Am J Prev Med 2002 May;22(4 Suppl):10-4. [19 references] [PubMed](#)

COMPLETE SUMMARY CONTENT

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SCOPE

DISEASE/CONDITION(S)

Diabetes mellitus (type I and type II)

GUIDELINE CATEGORY

Management
Prevention

CLINICAL SPECIALTY

Endocrinology
Family Practice
Internal Medicine
Pediatrics
Preventive Medicine

INTENDED USERS

Health Care Providers
Health Plans
Managed Care Organizations
Patients
Physicians
Public Health Departments

GUIDELINE OBJECTIVE(S)

- To focus on population-oriented strategies that can be implemented by communities and health-care systems to improve the care of persons with diabetes
- To provide guidance to decision makers in state and local health departments, managed care organizations, purchasers of health care, persons responsible for funding public health programs, and others who have an interest in or responsibility for improving the health and well-being of persons with diabetes
- To assist policy makers and health-care and public health providers to help their communities achieve health goals while using community resources efficiently

TARGET POPULATION

Disease and Case Management

Adult patients with diabetes mellitus (primarily type II) in managed care settings or community clinics

Diabetes Self-Management Education

Adults, adolescents, and children with type I or type II diabetes mellitus

INTERVENTIONS AND PRACTICES CONSIDERED

Health care system interventions

1. Disease management*
2. Case management**

Diabetes self-management education (DSME) at the following sites:

1. Community gathering places
2. Home
3. Work site[#]
4. Recreational camps[#]
5. Schools[#]

*Disease management in the clinical setting is "an organized, proactive, multicomponent approach to healthcare delivery. Care is focused on and integrated across the entire spectrum of the disease and its complications, the prevention of comorbid conditions, and the relevant aspects of the delivery system."

**Case management is a "set of activities whereby the needs of populations of patients at risk for excessive resource utilization, poor outcomes, or poor coordination of services are identified and addressed through improved planning, coordination, and provision of care."

#The Task Force found insufficient evidence on which to base recommendations for these interventions.

MAJOR OUTCOMES CONSIDERED

Intermediate (Process) Outcomes

- Screening and monitoring:
 - Blood pressure
 - Glycemic control
 - Lipid levels
 - Retinopathy
 - Peripheral neuropathy
 - Microalbuminuria
 - Weight

Short-term patient outcomes

- Glycemic control
 - Glycated hemoglobin
 - Fasting blood glucose
- Physiologic outcomes
 - Weight
 - Lipid levels
 - Foot lesions
 - Blood pressure
 - Microalbuminuria
 - Retinopathy
- Lifestyle
 - Physical activity
 - Diet
 - Smoking
 - Substance abuse
- Mental Health Outcomes
 - Depression
 - Anxiety

Long-term patient outcomes

- Macrovascular complications
 - Peripheral vascular disease
 - Coronary heart disease
 - Cerebrovascular disease
- Microvascular complications
 - Decreased vision
 - Peripheral neuropathy
 - Renal disease

- Foot ulcers
- Amputations
- Periodontal disease
- Mortality
- Quality of life
 - Disability/function

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
 Hand-searches of Published Literature (Secondary Sources)
 Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Disease and Case Management

The scientific literature was searched through December 2000 using the MEDLINE database of the National Library of Medicine (commenced in 1966), the Educational Resources Information Center database (ERIC, 1966), the Cumulative Index to Nursing and Allied Health database (CINAHL, 1982), and Healthstar (1975). The medical subject headings (MeSH) searched were diabetes, case management, and disease management, including all subheadings. Text word searches were performed on multiple additional terms, including care model, shared care, primary health care, medical specialties, primary, or specialist. Abstracts were not included because they generally had insufficient information to assess the validity of the study using Community Guide criteria. Dissertations were also excluded, because the available abstracts contained insufficient information for evaluation and the full text was frequently unavailable. Titles of articles and abstracts extracted by the search were reviewed for relevance and if potentially relevant the full-text article was retrieved. We also reviewed the reference lists of included articles and our consultants provided additional relevant citations.

To be included in the review, studies had to:

- be primary investigations of interventions selected for evaluation;
- be conducted in Established Market Economies;
- provide information on one or more outcomes of interest preselected by the Task Force, and
- meet minimum quality standards.

All types of comparative study designs were included, including studies with concurrent or before-and-after comparison groups.

Self-management Education in Community Settings

The medical literature was searched through December 2000 using the MEDLINE database of the National Library of Medicine (commenced in 1966), the

Educational Resources Information Center database (ERIC, 1966), the Cumulative Index to Nursing and Allied Health database (CINAHL, 1982), Healthstar (1975), Chronic Disease Prevention database (CDP, health promotion and education subfile, 1977), and the Combined Health Information Database (CHID, diabetes subfile and health promotion and education subfile, 1985). The medical subject headings (MeSH) searched (including all subheadings) were diabetes mellitus and diabetes educators combined with any of the following headings: community, community health services, patient education, health education, self-care, self-efficacy, self-help groups, blood glucose self-monitoring, and public health. Text word searches were performed using the following terms: community, self-care, self-manag* (wildcard search), self-help groups, blood glucose self-monitoring, and patient counseling. Abstracts were not included as they generally had insufficient information to assess the validity of the study according to Community Guide criteria. Dissertations were also excluded, as the available abstracts contained insufficient information for evaluation, and the full text was frequently unavailable. Titles and abstracts of articles extracted by the search were reviewed for relevance, and if potentially relevant the full-text article was retrieved. We reviewed reference lists of included articles and consulted our team of experts (the authors and consultants) for relevant citations.

To be included in the reviews of effectiveness, studies had to be:

- primary investigations of interventions selected for evaluation
- published in English
- conducted in established market economies
- provide information on one or more outcomes of interest preselected by the Task Force
- meet minimum quality standards

All types of comparative study designs were reviewed, including studies with concurrent or before-and-after comparison groups.

The review team identified 105 studies that met the inclusion criteria for the seven interventions that the Task Force evaluated for the report. Of those 105 studies, 35 were excluded on the basis of limitations in their execution and were not considered further. The remaining 70 studies were included in the review, and the Task Force recommendations presented in this report are based on those studies.

NUMBER OF SOURCE DOCUMENTS

70 studies of intervention and 3 economic evaluations

Disease management: 27 studies of intervention and 2 economic evaluations

Case management: 15 studies of intervention

Self-management education in community gathering places: 8 studies of intervention

Self-management education in the home: 10 studies of intervention and 1 economic evaluation

Self-management in recreational camps: 10 studies of intervention

Self-management in the worksite: 1 study of intervention

Education of school personnel about diabetes: 1 study of intervention

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Studies are categorized as having good, fair, or limited quality of execution based on the number of limitations (i.e., threats to validity) noted. Studies with limited quality of execution were not included in the summary effect of the intervention.

Good: 0 to 1 study limitations

Fair: 2 to 4 study limitations

Limited: 5 or more study limitations

Studies were evaluated for limitations in execution with respect to the following six categories (a total of 9 limitations are possible):

- Study population and intervention descriptions
- Sampling
- Exposure and outcome measurement
- Data analysis
- Interpretation of results (including follow-up, bias, and confounding)
- Other

In addition, the body of evidence of effectiveness is characterized as strong, sufficient, or insufficient based on the number of available studies, the suitability of their design and quality of execution, and the size and consistency of reported effects.

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Disease and Case Management

Data Abstraction and Synthesis

Community Guide rules of evidence characterize effectiveness as strong, sufficient, or insufficient on the basis of the number of available studies, the suitability of study designs for evaluating effectiveness, the quality of execution, the consistency of the results, and effect sizes. Each study that met the inclusion criteria was evaluated using a standardized abstraction form and assessed for suitability of its study design and threats to internal validity. Studies were characterized as having good, fair, or limited quality of execution on the basis of the number of threats to validity; only those with good or fair execution were included. A summary effect measure (i.e., the difference between the intervention and comparison group) was calculated for outcomes of interest. Absolute differences were used for outcomes with consistent measurement scales (e.g., hemoglobin A1c and blood pressure) and relative differences for outcomes with variable scales or weights of measurement (e.g., quality of life). Interquartile ranges are presented as an index of variability when seven or more studies were available in the body of evidence; otherwise ranges are shown.

The Task Force used lifestyle, health, and quality of life outcomes to formulate recommendations; knowledge and psychosocial mediators, however, are also important outcomes and were therefore included in the review.

Summarizing Other Effects and Barriers

The Community Guide systematic review of disease and case management in diabetes routinely sought information on other effects (i.e., positive and negative health or non-health "side effects") and barriers to implementation (if there was evidence of effectiveness); these were evaluated by the systematic review development team and mentioned if they were considered important.

Economic Evaluations

Reviews of studies reporting economic evaluations were performed only if the intervention was found to be effective.

Summarizing Applicability

The body of evidence used to assess effectiveness was also used to assess applicability. The systematic review development team and the Task Force drew conclusions about the applicability of the available literature to various populations and settings after examining data on patient and intervention characteristics, settings, follow-up periods, methods of participant recruitment, and participation rates.

Diabetes Self-Management Education (DMSE)

Data Abstraction and Synthesis

Each study that met the inclusion criteria was evaluated using a standardized abstraction form and assessed for study design suitability and threats to internal validity. Studies were characterized by the number of threats to validity as having good, fair, or limited quality of execution, and only those with good or fair execution were included. A summary effect measure (i.e., the difference between

the intervention and comparison groups) was calculated for outcomes of interest. Absolute and relative differences are presented for outcomes with consistent measurement scales (e.g., hemoglobin A1c [HbA1c] and blood pressure) and relative differences for outcomes with variable measurement scales (e.g., knowledge). Interquartile ranges were determined as an index of variability when seven or more studies were available in the body of evidence; otherwise ranges are presented. Pooled estimates of effect were calculated if there were a sufficient number of studies with comparable outcomes and if exploratory data analysis revealed potentially diverse results in the body of literature, or if confidence intervals frequently overlapped zero. Point estimates of effect on glycated hemoglobin (GHb) were calculated with both fixed and random effects models, using the inverse of the variance of the net change in glycated hemoglobin as the study weight. Computation of the between-study variance for the random effects model was obtained using the DerSimonian and Laird formula, employing estimates of within-group correlation (ρ) of 0.25, 0.5, and 0.75. The Chi-square value for heterogeneity (Q) and its p -value were calculated. The pooled estimates presented are from random effects models, with $\rho=0.75$, and 95% confidence intervals.

The Community Guide rules of evidence characterize effectiveness as strong, sufficient, or insufficient on the basis of the number of available studies, the suitability of study designs for evaluating effectiveness, the quality of execution, the consistency of the results, and the effect sizes.

Summarizing Other Effects, Barriers, Applicability, Economic Efficiency, and Research Gaps

Other effects, barriers, applicability, and research gaps were assessed in the same body of evidence used to assess effectiveness, along with input from the systematic review development team. Additional information on other positive and negative effects and applicability is described for each intervention, and economic efficiency and barriers to implementation are described for interventions for which there was sufficient evidence to formulate recommendations.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Other

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Task Force recommendations are based primarily on the effectiveness of interventions as determined by the systematic literature review process. In making recommendations, the Task Force balances information about the effectiveness of an intervention with information about other potential benefits and potential harms. To determine how widely a recommendation should apply, the Task Force also considers the applicability of the intervention in various settings and populations. Finally, the Task Force reviews economic analyses of those interventions found to be effective and summarizes applicable barriers to intervention implementation. Economic information is provided to assist the reader with decision making but generally does not affect the Task Force's recommendation.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Strength of Evidence of Effectiveness = Strength of Recommendation

Strongly recommended: Strong evidence of effectiveness was found.

Recommended: Sufficient evidence of effectiveness was found.

Insufficient evidence: The available studies provided insufficient evidence to assess the effectiveness of the intervention.

Not recommended: The available studies provided sufficient evidence that the intervention is ineffective or that harms exceed benefits.

COST ANALYSIS

Each of the "Recommended" or "Strongly Recommended" interventions included a systematic review of information from economic evaluations.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The guideline was submitted to an extensive peer review, including review at various stages by a "consultant team", and external team of subject matter and methodologic experts, focus group testing for clarity and content, and peer review of the finished product by agencies and professional groups.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The relationship between the strength of evidence of effectiveness and the strength of the recommendation is defined at the end of the "Major Recommendations" field.

Healthcare System Interventions

The Task Force reviewed two interventions to improve the performance of healthcare systems and providers delivering care to persons with diabetes: disease management and case management. In the last decade, new systems of health care delivery such as these have emerged for many reasons: traditional systems have failed to meet the needs of persons with diabetes, population demographics have changed, new healthcare technology is continually emerging, more attention is being paid to quality of life and other patient-oriented outcomes, society demands the minimization of medical errors, and there is a desire to make the most of limited healthcare resources.

Disease management (strongly recommended)

Disease management of diabetes in the clinical setting is an organized, proactive, multi-component approach to health care delivery for all members of a population with diabetes or for a subpopulation with specific health risk factors. It embraces all aspects of the delivery system. Care is focused on, and integrated across, the entire spectrum of the disease and its complications as well as the prevention of comorbid conditions. The goal is to improve short- and long-term health or economic outcomes, or both, in the entire population with diabetes.

The essential components of disease management are:

1. identification of individuals or populations with diabetes (or a subset with certain risk factors)
2. use of guidelines or performance standards to manage those identified
3. information systems to track and monitor interventions and patient-, practice-, or population-based outcomes
4. measurement and management of patient and population outcomes

Other interventions may be incorporated into disease management interventions, and these can be focused on:

1. the healthcare system (e.g., practice redesign, electronic information systems, changes in models of care)
2. the provider (e.g., reminders, education, feedback, decision support)
3. the patient or population (e.g., patient-centered care strategies, diabetes self-management education (DMSE), reminders, feedback, telephone call outreach)

Disease management is strongly recommended by the Task Force based on strong evidence of its effectiveness in improving glycemic control, provider monitoring of glycosylated hemoglobin (GHb), and screening for diabetic retinopathy. Sufficient evidence is also available of its effectiveness in improving provider screening of the lower extremities for neuropathy and vascular changes, urine screening for protein, and monitoring of lipid concentrations. This recommendation is applicable to adults with diabetes, in the settings of managed care organizations and community clinics in the United States and Europe. Although a number of other important health outcomes were examined, including blood pressure and lipid concentrations, data were insufficient to make recommendations based on these outcomes.

Case management (strongly recommended)

Case management is "a set of activities whereby the needs of populations of patients at risk for excessive resource utilization, poor outcomes, or poor coordination of services are identified and addressed through improved planning, coordination, and provision of care". It usually involves the assignment of authority to a single professional (the case manager, most commonly a nurse) who is not a provider of direct health care.

The essential features of case management are:

1. the identification of eligible patients
2. the assessment of individual patients' needs
3. development of an individual care plan
4. implementation of that care plan
5. monitoring of outcomes

Case management is often combined with disease management but may also stand alone as an intervention or be combined with other clinical care interventions (e.g., practice guidelines or patient reminders).

Case management is strongly recommended by the Task Force based on strong evidence of its effectiveness in improving glycemic control. Evidence is also available of its effectiveness in improving provider monitoring of GHb, when case management is combined with disease management. These findings are applicable primarily in the U.S. managed care setting for adults with type 2 diabetes.

Diabetes Self-Management Education Interventions

The Task Force reviewed several interventions delivered in community settings to improve the self-management of persons with diabetes or to increase the understanding of diabetes among coworkers or school personnel. DMSE, the process of teaching people to manage their own diabetes, is considered by many to be "the cornerstone of care for all individuals with diabetes who want to achieve successful health-related outcomes". The goals of diabetes education are to optimize metabolic control, prevent acute and chronic complications, and achieve an optimal quality of life, while keeping costs acceptable. One of the Healthy People 2010 goals is to increase to 60% (from the 1998 baseline of 40%) the proportion of people with diabetes who receive formal diabetes education. Significant knowledge and skill deficits are found in 50%–80% of persons with diabetes and levels of glycemia (as measured by GHb, which includes hemoglobin A1c [HbA1c] and hemoglobin A1 [HbA1], both formed nonenzymatically from hemoglobin and glucose) are unacceptably high in both persons with type 1 and type 2 diabetes. DMSE is provided in a variety of settings, including recreational camps, schools, the worksite, the home, and community gathering places. Although these interventions have some common characteristics, target populations, providers, and content can differ, and thus we have defined them as separate interventions in this review.

Diabetes self-management education in community gathering places (recommended for adults with type 2 diabetes)

In this intervention, DMSE is provided to persons over the age of 18 years in settings other than the home, clinic, school, or worksite (e.g., community centers, faith-based institutions, libraries, or private facilities such as residential cardiovascular risk-reduction centers). Community gathering places have been pursued because traditional clinical settings may not be ideal for DMSE of adults, the home setting is conducive only to individual or family teaching, and education at the worksite does not reach those not working outside the home.

Based on Community Guide rules of evidence, the Task Force concluded that there is sufficient evidence of effectiveness in improving glycemic control to recommend

DMSE interventions in community gathering places for adults with type 2 diabetes. It should be noted, however, that these interventions were rarely coordinated with the patient's clinical care provider and the nature and extent of care in the clinical setting was unclear. DMSE for adults with type 2 diabetes delivered in the setting of community gathering places should be coordinated with the person's primary care provider, and these interventions are not meant to replace education delivered in the clinical setting.

Diabetes self-management education in the home (recommended for adolescents with type 1 diabetes; insufficient evidence for persons with type 2 diabetes)

The home may be a good setting for DMSE interventions because the educator can address issues that may be more difficult to deal with in the clinical setting, such as cultural, family, and environmental factors affecting lifestyle, self-monitoring of blood glucose, and barriers to optimal self-care.

Based on Community Guide rules of evidence, there is sufficient evidence that DMSE in the home is effective for improving glycemic control among adolescents with type 1 diabetes, whether using home visits or computer-assisted instruction. Too few studies were available to assess the effectiveness of DMSE in the home for persons with type 2 diabetes.

Diabetes self-management education in the camp setting (insufficient evidence)

DMSE in summer camps exposes children and adolescents with type 1 diabetes to intensive self-management education in a short-term recreational camp setting (usually 1–2 weeks). Summer camps, where education can be readily integrated into daily routines, have several advantages: medical treatment and compliance with educational programs can be optimized, food intake is controlled, physical activity can be pursued, and medical expertise is usually readily available.

The Task Force identified 10 qualifying studies, all of adolescents with type 1 diabetes. There was an insufficient number of quality studies demonstrating positive effects on health outcomes, such as glycemic control. Based on Community Guide rules of evidence, the Task Force concluded there was insufficient evidence to recommend for or against this intervention because:

- only a few studies evaluated relevant health outcomes
- there were limitations in study design and execution
- results were inconsistent

Diabetes self-management education in the worksite (insufficient evidence)

Worksite interventions may involve DMSE, as well as education of coworkers or supervisors. Because workers spend a significant portion of their time at work, DMSE in the worksite may improve access to health promotion efforts. Education of supervisors, managers, and coworkers about diabetes can create a supportive

environment for self-management, while minimizing discrimination and preparing fellow employees to respond appropriately to diabetes-related emergencies.

Based on Community Guide rules of evidence, the Task Force concluded that evidence was insufficient to assess the effectiveness of this intervention as there was only one qualifying study with design limitations.

Education of school personnel about diabetes (insufficient evidence)

Educating teachers and other school professionals about diabetes can create a supportive environment for self-management, minimize disruption in educational routines attributable to diabetes, and allow school personnel to respond appropriately to diabetes-related emergencies. Based on Community Guide rules of evidence, the Task Force concluded that there was insufficient evidence to assess the effectiveness of this intervention.

Additional Reviews

The Task Force is currently reviewing the evidence of effectiveness of several additional healthcare system interventions related to the treatment of persons with diabetes: provider and patient reminder and recall systems, models of care delivery, provider monitoring and feedback, and telephone call outreach to patients. In addition, reviews are planned to assess the effectiveness of family, public policy, and public service interventions in diabetes care. Completion and release of the Task Force evaluations and conclusions regarding these additional reviews are anticipated later this year.

Definitions:

Strongly recommended: Strong evidence of effectiveness was found.

Recommended: Sufficient evidence of effectiveness was found.

Insufficient evidence: The available studies provided insufficient evidence to assess the effectiveness of the intervention.

Not recommended: The available studies provided sufficient evidence that the intervention is ineffective or that harms exceed benefits.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations are based on 70 qualifying studies, all of which had good or fair execution quality. In general, the strength of evidence of effectiveness

corresponds directly to the strength of recommendations (see the "Major Recommendations" field).

Detailed descriptions of the evidence are provided in the two evidence reviews accompanying this guideline:

- Susan L. Norris, Phyllis J Nichols, Carl J. Caspersen, et al. Increasing Diabetes Self-Management Education in Community Settings: A Systematic Review. *Am J Prev Med.* 2002 May; 22(4 Suppl): 39-66.
- Susan L. Norris, Phyllis J Nichols, Carl J. Caspersen, et al. The Effectiveness of Disease and Case Management for Persons with Diabetes: A Systematic Review. *Am J Prev Med.* 2002 May; 22(4 Suppl): 15-38.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Reducing morbidity and mortality and improving quality of life through prevention, increasing early diagnosis, and increasing screening rates for diabetes complications.
- The Task Force identified an additional potential benefit in that the organized and evidence-based approach to care in diabetes may be extended to other diseases and health care needs in an organization. The same kind of infrastructure that supports diabetes disease and case management interventions, including information systems, practice guidelines, and support staff training and resources, could be used for the care of persons with cardiovascular disease, mental health disorders, or chronic pain or for the delivery of preventive services (e.g., immunizations of adults and children using registries and reminder/recall systems).

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- These recommendations represent the work of the Task Force on Community Preventive Services (the Task Force). An independent, nonfederal group, the Task Force is developing the Guide to Community Preventive Services (the Community Guide) with the support of the U.S. Department of Health and Human Services (DHHS), in collaboration with public and private partners. The Centers for Disease Control and Prevention (CDC) provides staff support to the Task Force for developing the Community Guide. The recommendations presented in this report, however, do not necessarily represent the recommendations of the Centers for Disease Control and Prevention or the U.S. Department of Health and Human Services.
- The strength of each recommendation is based on the strength of the evidence of effectiveness (e.g., an intervention is strongly recommended

when there is strong evidence of effectiveness, and recommended when there is sufficient evidence). Other types of evidence can also affect a recommendation. For example, evidence of harms resulting from an intervention might lead to a recommendation that the intervention not be used if adverse effects outweigh improved outcomes. In general, the Task Force does not use economic information to modify recommendations.

- A finding of insufficient evidence of effectiveness should not be seen as evidence of ineffectiveness, but rather reflects the fact that the systematic review did not identify enough information for the Task Force to make a recommendation. Further, it is important for identifying areas of uncertainty that require additional research. In contrast, sufficient or strong evidence of ineffectiveness leads to a recommendation that the intervention not be used.
- Evidence of the effectiveness of diabetes self-management education (DSME) was reviewed in four settings: community gathering places, the home, recreational camps, and the worksite. The effectiveness of educating coworkers and school personnel about diabetes was also reviewed. The effectiveness of interventions for type 1 and type 2 diabetes were examined separately as the education of children and adolescents (who usually have type 1 diabetes) is very different from the education of adults (who usually have type 2 diabetes). Children face different social pressures and have parental involvement; education theory and methods are different for children and adults; and persons with type 1 diabetes are insulin-dependent, unlike most of those with type 2 disease, resulting in differences in management.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Given the large public health burden of diabetes, improving care for persons with diabetes is relevant to most communities. This guideline and other related publications provide guidance from the Task Force on Community Preventive Services to a variety of important audiences, including personnel in state and local health departments, managed care organizations, purchasers of health care, those responsible for funding public health programs, and others with an interest in, or responsibility for, improving the health and well-being of persons with diabetes. In selecting and implementing interventions, communities should strive to develop a comprehensive strategy to manage persons with diabetes, which includes improving glycemic control, blood pressure, and lipid concentrations; decreasing complications and mortality; and improving quality of life.

Choosing interventions that work in general and that are well matched to local culture, needs, and capabilities, then implementing those interventions well, are vital steps for improving outcomes among persons with diabetes. In setting priorities for interventions to meet local objectives, recommendations and other evidence provided in the Community Guide should be considered along with such local information as resource availability, administrative structures, and the cultural, economic, social, and regulatory environments of organizations and practitioners. Information regarding applicability can be used to assess the usefulness of an intervention in a particular setting or population. Although available studies are limited in number and variable in quality, economic information might be useful in identifying (1) resource requirements for interventions and (2) interventions that meet public health goals more efficiently

than other available options. If local goals and resources permit, the use of "strongly recommended" and "recommended" interventions should be initiated or increased.

A starting point for communities and healthcare systems is to assess the current burden of diabetes in the community or organization, the level of care and education provided to residents with diabetes, and complication rates. Comparison can then be made to care guidelines and goals of treatment presented by organizations such as the American Diabetes Association. Community approaches can then be developed to address health disparities and to optimize care and quality of life.

Finally, the associated reviews that led to the recommendations above should be useful to researchers and scientific organizations to identify directions for future research. The Task Force reiterates that a finding of insufficient evidence, resulting in no recommendation for some interventions, is not a conclusion that the intervention was ineffective but rather a reflection of the insufficient number of high-quality studies on which to base a conclusion. A finding of insufficient evidence, therefore, identifies areas in need of further research.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Recommendations for healthcare system and self-management education interventions to reduce morbidity and mortality from diabetes. Am J Prev Med 2002 May; 22(4 Suppl): 10-4. [19 references] [PubMed](#)

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2002 May

GUIDELINE DEVELOPER(S)

Task Force on Community Preventive Services - Independent Expert Panel

SOURCE(S) OF FUNDING

United States Government

GUIDELINE COMMITTEE

Task Force on Community Preventive Services

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Task Force Members: Fielding, Jonathan, M.D., M.P.H., M.B.A. (Chairperson); Mullen, Patricia Dolan, Dr. P.H. (Vice Chairperson); Brownson, Ross, Ph.D.; Fullilove, Mindy, M.D.; Guerra, Fernando, M.D., M.P.H.; Hinman, Alan R., M.D., M.P.H.; Isham, George J., M.D.; Land, Garland H., M.P.H.; Mahan, Charles S., M.D.; Nolan, Patricia A., M.D., M.P.H.; Scrimshaw, Susan C., Ph.D.; Teutsch, Steven M., M.D., M.P.H.; Thompson, Robert S. (Tommy), M.D.

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

This guideline is subject to periodic updates.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the [Task Force on Community Preventive Services Web site](#). Also available from the [National Library of Medicine's Health Services/Technology Assessment Text \(HSTAT\) Web site](#).

Print copies: Available from the Community Guide Branch, Epidemiology Program Office, Centers for Disease Control and Prevention, 4770 Buford Highway, Mailstop K-73, Atlanta, GA 30341.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

Guideline Summary:

- Strategies for reducing morbidity and mortality from diabetes through health-care system interventions and self-management training and education in community settings. A report on recommendations of the Task Force on Community Preventive Services. MMWR Recomm Rep. 2001 Sep 28;50(RR-

16): 1-15. Available from the Centers for Disease Control and Prevention (CDC) Web site: [Portable Document Format \(PDF\)](#); [HTML Format](#)

Evidence Reviews

- Susan L. Norris, Phyllis J Nichols, Carl J. Caspersen, et al. Increasing Diabetes Self-Management Education in Community Settings: A Systematic Review. *Am J Prev Med*. 2002 May; 22(4 Suppl): 39-66.
- Susan L. Norris, Phyllis J Nichols, Carl J. Caspersen, et al. The Effectiveness of Disease and Case Management for Persons with Diabetes: A Systematic Review. *Am J Prev Med*. 2002 May; 22(4 Suppl): 15-38.

Guideline-Specific Background Articles:

- McGinnis JM. Diabetes and physical activity [Commentary]. *Am J Prev Med*. 2002 May; 22(4 Suppl): 1-2.
- Funnell MM, Anderson RM. Working toward the next generation of diabetes self-management education [Commentary]. *Am J Prev Med*. 2002 May; 22(4 Suppl): 3-5.
- Kriska A. Striving for a more active community [Commentary]. *Am J Prev Med*. 2002 May; 22(4 Suppl): 6-7.

General Background Articles:

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Users can access the complete collection of companion documents at the [Task Force on Community Preventive Services Web site](#).

Print copies: Available from the Community Guide Branch, Epidemiology Program Office, Centers for Disease Control and Prevention, 4770 Buford Highway, Mailstop K-73, Atlanta, GA 30341.

PATIENT RESOURCES

None available

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